



# Evaluation of the In-School Tobacco Use Prevention Education Program, 2003-2004

California Tobacco Control Program



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Prepared by  
William J. McCarthy, Ph.D.,  
Barbara J. Dietsch, Ph.D.,  
Thomas L. Hanson, Ph.D.,  
Hong Zheng, M.P.H.



Arnold Schwarzenegger, Governor  
State of California

Kim Belshé, Secretary  
California Health and Human Services Agency

Mark Horton, Director  
California Department of Public Health



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# Contents

Introduction .....1

Background .....2

Evaluation Design .....3

Evaluation Findings .....5

References.....13





# Introduction

The *2003-2004 In-School Evaluation of Tobacco Use Prevention Education (TUPE) Programs (IETP)* was conducted to fulfill the enabling legislation requirements for Proposition (Prop) 99 (Assembly Bills 75, 99, 816, and Senate Bill 391). Current legislation mandates the California Department of Public Health (CDPH), California Tobacco Control Program (CTCP), to evaluate the effectiveness of the California Department of Education (CDE) school-based TUPE programs in California. This report focuses on an evaluation of school-based tobacco use prevention activities in 261 randomly sampled middle and high schools. Additional program evaluation guidelines outlined in California Health and Safety Code Section 104375 call for an assessment of school-based tobacco use prevention activities and measurement of student responses to these activities.

This is the fifth biennial report, following up on results presented in the 2001-2002 IETP (report no. 4) and three previous Independent Evaluation Student Survey (IESS) reports (Independent Evaluation Consortium, 1998a, 1998b, and 2003). Most of the questions used in the 2003-2004 IETP were retained from the previous evaluations to permit comparability of findings across reports. This most current IETP collected extensive information on adolescent tobacco use and its correlates (e.g., attitudes, exposure to media, social norms) through the in-school administration of the 2003-2004 California Student Tobacco Survey (CSTS). The evaluation also collected data on beliefs and knowledge about tobacco education program implementation and prevention efforts from teachers, school administrators, school TUPE/health coordinators, and district TUPE/health coordinators. The current report uses data from all of these sources to examine TUPE program implementation and program effectiveness.

Broadly speaking, several findings from this evaluation are worthy of mention for their policy implications: (1) In an overall climate of anti-tobacco legislation, market forces, and social censure, youth tobacco use in California continues to decline; (2) against this backdrop of generally low tobacco use prevalence among youth, school-based TUPE programs are not remarkably related to student tobacco use outcomes; (3) there are no striking differences between grantee and non-grantee schools; (4) however, some youth do use tobacco, and certain types of TUPE resonate with students and are considered helpful by all youth; (5) despite growing awareness and support of tobacco use prevention, teachers in general may be unclear about the level of support for such instruction and are often unprepared to deliver instruction in the absence of targeted in-service training; (6) messages from district and administrators that teachers are expected to provide TUPE instruction, and the use of more interactive methods of instruction, appear to be associated with positive student reports of program exposure and with increases in selected anti-smoking attitudes.

# Background

Since 1994, CDE has allocated school-based TUPE funds to school districts using two different mechanisms. First, funds for TUPE programs in grades four through eight were allocated to districts on an “entitlement basis”—all schools in tobacco-free school districts serving students in grades four through eight received funding for tobacco use prevention services based on average daily attendance.

Second, a “competitive grant” process was used to allocate funds for programs in grades nine through twelve and, more recently, for innovative programs in grades six through eight. Districts with multifaceted programs using measurable objectives, strong rationales for interventions, high levels of community and school involvement, high quality monitoring and evaluation activities, and highly qualified personnel are more likely to receive competitive grants than other districts. Both entitlement and competitive program funds are required to support tobacco-specific instruction, reinforcement activities, special events, and tobacco use cessation programs for students.

IETP provides information from data collected in districts supported by both of these mechanisms, with particular attention paid to schools with competitive grants, since these schools’ additional TUPE resources, compared to non-TUPE award schools, were expected to yield measurable improvements in TUPE outcomes. Since TUPE funds were allocated more evenly among middle schools, fewer differences were expected between middle schools in relation to TUPE funding.



# Evaluation Design

IETP relied on data collected from a variety of sources to examine school-based tobacco use prevention and intervention activities and student responses to these activities in California public schools. The evaluation focused on four broad research questions with regard to youth tobacco use and prevention in California:

1. What was the prevalence of tobacco-related behaviors, attitudes, knowledge and awareness about tobacco and tobacco use prevention among California students in 2003-2004?
2. What types of school-based tobacco use prevention and intervention policies and practices were being implemented in California schools in 2003-2004, and to what level and consistency were they being implemented?
3. Was program exposure associated with lower levels of student tobacco use and with lower levels of factors known to be precursors to tobacco use (e.g., pro-smoking attitudes)?
4. What are the contextual influences, such as the degree of support for teaching TUPE lessons from district administrators, that need to be taken into account when designing more effective school-based TUPE programs?

To answer these four questions, the evaluation relied on a cross-sectional design that allowed for comparisons of data from students, teachers, and administrators at one point in time. It was also possible to examine trends over time by using data obtained from common questions from the 2001-2002 IETP and from the three previous IESS surveys. Since this evaluation does not have data on the same students across time, it is cross-sectional and thus, time-dependent causal inferences cannot be made with confidence. The analyses of program effectiveness allowed examination of the associations between program participation/exposure and student tobacco use outcomes. However, strong inferences about causal direction could not be made, and all assessments of TUPE program impact should be made with caution.

Data was collected from students, teachers, and administrators at the school level, and administrators at the district level. Weights that take into account the complex survey design and that correct for student and school non-response were applied to analyses. The deliberate multi-stage sample design, as well as post-hoc comparisons with state educational databases ensure that the sample is broadly representative of the population of California middle and high schools and their students.

The response rate from schools (85 percent) was adequate in light of recently increased research/testing demands on schools. As expected, school participation rates were substantially higher in high schools with competitive TUPE grants (90 percent) than in those schools with no grant (74 percent). Both school-level and student-level participation rates were higher in middle schools than in high schools (90 percent versus [vs.] 82 percent for schools and 70 percent vs. 64 percent for students). Although minimal, there was some evidence of over-representation of Caucasians and children from affluent areas in the final sample.

# Evaluation Findings

**Question 1:** *What was the prevalence of tobacco-related behaviors, attitudes, knowledge and awareness about tobacco and tobacco use prevention among California students in 2003-2004?*

## **1. Prevalence of youth tobacco use is higher in higher grades, among boys, and among Caucasians.**

The 2003-2004 CSTS statewide data on in-school youth indicate that:

- Cigarette smoking is generally low in sixth grade and successively increases with grade level.
- Lifetime cigarette use ("have you ever smoked?") ranges from nine percent in sixth grade to 52 percent in 12th grade.
- Current cigarette use (during one or more days of the prior 30-day range) ranges from two percent in sixth grade to 17 percent in 12th grade.
- Frequent cigarette use (on 20 or more days of the prior 30 days) ranges from 0.6 percent in sixth grade to nearly five percent in 12th grade.
- Use of over-100-cigarettes in a lifetime remained below two percent until eighth grade and rose to nine percent in 12th grade.
- Boys report higher lifetime, current, and frequent cigarette smoking rates than girls across grades; for example, in terms of smoking prevalence, 11 percent of boys reported current smoking, compared to nine percent of girls.
- Caucasian students report higher current, frequent, and lifetime smoking rates than other ethnic groups, particularly in higher grades.
- Over half of lifetime smokers reported smoking a whole cigarette after they were 13 years old; one-fifth reported doing so at age 10 or younger, and boys start smoking earlier than girls.
- There are no consistent regional differences in lifetime or current smoking, although the Central Valley exhibited the highest lifetime smoking prevalence at 41 percent. Inland regions displayed higher smokeless tobacco use (e.g., four percent in Central Valley) compared to coastal/urban regions (two percent in Los Angeles).

## **2. Prevalence of California youth tobacco use continues to show a decreasing trend over time; although prevalence of students who smoke and want to quit for good is high.**

- The 2003-2004 CSTS results generally indicate a continuing trend towards reduced adolescent tobacco use in California in-school youth, and a lower prevalence of tobacco use compared to the rest of the United States (U.S.).

- A great majority of respondents indicate they “definitely would not” smoke in the following year (75 percent of middle-schoolers and 59 percent of high-schoolers).
- About half of lifetime and current smokers reported wanting to quit smoking cigarettes and approximately one out of 10 smokers have participated in available tobacco use cessation programs, including the state tobacco quitline.

### **3. California students do not believe that “smoking is cool” and do believe that tobacco use is harmful.**

- Across all gender and ethnic groups, close to 80 percent of respondents did not think that young people who smoke have more friends; 87 percent did not think smoking made people look “cool.”
- About 43 percent of students across grades believe that most young people do not use tobacco, but this belief is more widely endorsed by students in lower (e.g., 59 percent in 6th grade) than higher grades (e.g., 37 percent in 12th grade). However, these estimates are higher than in previous years, indicating a reduction in perceived prevalence of peer tobacco use.
- An overwhelming majority of students (between 85 percent and 95 percent for various measures) perceived negative health consequences from tobacco use.
- Most students reported strongly negative attitudes towards the tobacco industry, particularly for the statement that “tobacco companies try to get people addicted to cigarettes” (87 percent in middle school and 92 percent in high school).
- Current smokers were less likely to report anti-tobacco/anti-smoking beliefs than those who were not current smokers.

### **4. California youth are less exposed to secondhand smoke and are less likely to have smokers around them, compared to previous years.**

- A majority of respondents are *not* exposed to tobacco smoke at home or in a car, do not live with a smoker, and do not have a close friend who smokes.
- High-schoolers are more likely to have been exposed to secondhand smoke (SHS) than middle schoolers.
- More students reported *living* with a smoker than reported being *exposed* to SHS, indicating that smokers in students’ lives may be smoking elsewhere than inside a room or car occupied by students.
- As expected, smokers (compared to non-smokers) were much more likely to be exposed to SHS and to have close friends who smoked.

### **5. California youth report frequent exposure to anti-smoking messages but are also exposed to pro-tobacco media.**

- Over 85 percent of middle school students and about 89 percent of high school students report some exposure to, and/or recall of anti-smoking

messages, most often via television, with the highest percentage recalling the American Legacy Foundation's "truth" television advertisements.

- However, a large proportion of students also recall seeing actors using tobacco on television and in movies (78 percent in middle school and 87 percent in high school), and roughly half see tobacco ads at sport/community events (49 percent in middle school, and 52 percent in high school).
- Most students reported NOT buying or receiving tobacco-related items in the previous year (over 85 percent), although significantly fewer smokers could say the same.

#### **6. California youth report exposure to tobacco information in school in greater proportions than previous years, and perceive this information to be helpful.**

- Greater proportions of younger students recall receiving tobacco information than older students (71 to 81 percent through ninth grade but 47 percent in 12th grade), possibly because TUPE is typically delivered in courses relevant to lower grades.
- Across grades, 80 percent of students felt such information was helpful in making decisions about tobacco use; however, students in lower grades were more likely to feel so than those in higher grades.
- Students are also more aware of other tobacco-prevention activities such as school-based peer training for tobacco use cessation—over half the respondents thought a peer could be trained to help another quit smoking, compared to less than ten percent of an equivalent sample in 2001-2002.

**Question 2:** *What types of school-based tobacco use prevention and intervention policies and practices were being implemented in California schools in 2003-2004, and to what level and consistency were they being implemented?*

#### **7. Most California teachers surveyed do not smoke and are supportive of tobacco-free school policies; however, few teachers report providing TUPE lessons and are less clear about their role in such education and the degree of support for such education.**

- The prevalence of current smoking among teachers is roughly five percent and the prevalence of "daily smoking" was around two percent; over 80 percent of teachers who have smoked over 100 cigarettes in their lifetime are currently abstinent and report not having smoked at all in the previous month.
- A large majority (89 percent) of teachers expressed strong support for their school's no-tobacco-use policy; those less likely to express support included, as expected, the few teachers who smoked.
- Across all teachers, 31 percent reported having taught some kind of tobacco use prevention lesson in the last school year; 64 percent of physical education, health, and science teachers had done so. This figure was lower than in previous evaluations of TUPE programs.

- Also lower was the percentage of teachers who said district administrators expect them to teach tobacco use prevention lessons (18 percent compared to 36 percent in the previous evaluation). This percentage, however, is roughly 53 percent for perception of school administrator expectations by physical education, health, and science teachers.
- Among teachers who had taught TUPE in the previous or current year, over two-thirds reported experiencing either a moderate or a great deal of support from both school and district administrators for imparting such education.
- Most teachers (90 percent) think students were moderately or very interested in tobacco use prevention lessons they had taught, but this perception is associated with teacher perception of school-level support; the lower the perceived school-level support, the lower the teacher-rated student interest in TUPE information.
- Of various barriers to TUPE, teachers most frequently reported lack of time (57 percent), followed by the observation that prevention was not a formally mandated part of the teachers' curriculum (44 percent).

**8. Although many teachers have mainstreamed tobacco use prevention in their teaching, they continue to use conventional teaching methods and focus on the physical correlates of tobacco use.**

- Over half the teachers reported infusing their regular subjects with tobacco use prevention lessons.
- The effects of tobacco use on physical health continues to remain the most popular curriculum topic (78 percent of teachers), followed by the effects of SHS (58 percent), and only then by social and behavioral factors and skills (such as teaching refusal skills). Cigars, smokeless tobacco, and smoking cessation are the least cited curriculum topics (12 percent to 17 percent).
- The most common modes of educational delivery were classroom discussion (92 percent) and lecture (87 percent), with surprisingly low reported usage of role-playing (never used by 55 percent) and small-group activities (never used by 37 percent).
- Teachers continue to find it difficult to involve parents meaningfully in anti-tobacco activities.

**9. Larger proportions of TUPE-eligible teachers report receiving in-service training than in previous years. Trained teachers are more likely to report confidence in their preparedness to teach TUPE lessons; however, many teachers are not using or are not aware of specific science-based tobacco-use-prevention curricular programs.**

- Among health, physical education, and middle school science teachers (those most often responsible for tobacco lessons), over 44 percent received some in-service training in TUPE during the last five years, and more than a quarter received more than one full day of such training. Although the proportion receiving all-day trainings has declined since 2001-2002, a larger proportion of those eligible to teach TUPE have received some kind of in-service training since the last evaluation.
- Generally, only teachers who have received specific training report feeling well-prepared to teach TUPE lessons; such teachers are eight times more likely than those without training to report being prepared “a great deal” to deliver tobacco-use prevention lessons.
- In general, teachers did not rely on science-based published curricula for their TUPE lessons, or on any curricula. Despite the survey listing a selection of 26 specific science-based curricula recommended by the Centers for Disease Control and Prevention (CDC), over half of the TUPE-experienced teachers chose “none of the above” as their only response.
- Several respondents felt they may have used a specific curriculum even though they did not know the name; only 17.5 percent of TUPE-experienced teachers reported receiving training for a specific curriculum; most of those who received some training were exposed to general youth development content rather than health-based prevention/intervention or tobacco-specific content.
- Qualitative data indicated that some site coordinators feel unprepared to teach about tobacco use. They also indicate that there are real barriers to engaging teachers in professional development and implementing TUPE training among already overburdened teachers.

**Question 2:** *What types of school-based tobacco use prevention and intervention policies and practices were being implemented in California schools in 2003-2004, and to what level and consistency were they being implemented?*, and **Question 4:** *What are the contextual influences, such as the degree of support for teaching TUPE lessons from district administrators, that need to be taken into account when designing more effective school-based TUPE programs?*



**10. High schools with competitive TUPE grants are more likely than non-grantee high schools to offer tobacco use cessation services to students, sponsor school-wide anti-tobacco activities, and provide science-based tobacco use prevention instruction training to teachers and school coordinators.**

- Teachers in high schools that received competitive TUPE grants, compared to non-grantee high schools, reported higher prevalence of school-wide anti-tobacco activities such as “Teens Kick Ash” assemblies, and “Great American Smokeout,” etc.
- Grantee high schools also reported greater prevalence of tobacco use cessation programs.
- Grantee high school teachers reported higher in-service training rates (46 percent compared to 11 percent among non-grantee school teachers) and higher rates of science-based prevention training (25 percent compared to 2 percent).

**11. Grantee high schools are not significantly different from non-grantee high schools on several aspects of TUPE program implementation; grantee middle schools are not distinguishable from non-grantee middle schools on prevention/intervention services or on TUPE program implementation.**

- There is no evidence that grantee high schools differ from non-grantee high schools in terms of teacher, administrator, or coordinator reports of various prevention/intervention services such as tobacco use cessation activities, consequences of violating the school’s no-tobacco-use policies, tobacco use prevention instruction, and topics covered.
- Grantee middle schools are also not different from non-grantee middle schools on teacher, coordinator, or administrator reports of the above mentioned services, but are different regarding prevalence of school-wide anti-tobacco activities or professional development/training activities.

**12. Students attending schools with competitive TUPE grants are equally likely to recall exposure to tobacco use prevention services and to have similar tobacco use patterns as students attending non-grantee schools.**

- Students in grantee middle schools reported roughly equivalent (if somewhat lower) exposure to tobacco use prevention/intervention services (received information about tobacco, taught about why people smoke, taught about physical harm from smoking, etc.) as those students in non-grantee middle schools.
- Students in grantee high schools reported significantly higher exposure to tobacco use cessation training and classes than those in non-grantee high schools; however, grantee and non-grantee high school students are not different in their exposure to all other tobacco use prevention/intervention services.
- Even after adjusting for potential confounding factors such as school socio-economic status, students in grantee vs. non-grantee schools were also

not significantly different in terms of lifetime, current, daily, or lifetime 100+ cigarette use prevalence, and in terms of most precursors to tobacco use (e.g., intent to smoke, ease of cigarette refusal, anti-smoking social perceptions, etc.).

**Question 3:** *Was program exposure associated with lower levels of student tobacco use and with lower levels of factors known to be precursors to tobacco use (e.g., pro-smoking attitudes), and* **Question 4:** *What are the contextual influences, such as the degree of support for teaching TUPE lessons from district administrators, that need to be taken into account when designing more effective school-based TUPE programs?*

**13. There are inconsistent results regarding relationships of school-level tobacco use prevention practices and policies to student-reported program exposure: some school-wide prevention activities and specific TUPE-program implementation measures are positively associated with student program exposure, but several are not, or are not different between students in grantee vs. non-grantee schools.**

- Enforcement of the school's no-tobacco-use-on-campus policies was unrelated to student exposure to prevention services according to teacher and TUPE coordinator reports; however, administrator reports of higher enforcement were associated with lower levels of reported program exposure by students.
- Similarly, students in schools that sponsored school-wide tobacco use prevention activities were more likely to report finding TUPE information helpful, and to report peer abstinence training and availability of tobacco use cessation classes. In TUPE-funded schools alone, such school-level sponsorship was associated with higher reports of student exposure to tobacco-related information and to refusal skills training.
- Support from the school district in the form of clear communication that teachers were expected to teach TUPE lessons to students was associated with higher student reports of receiving tobacco-related information and higher perceived usefulness of such information.
- Tobacco use prevention lessons, hours of instruction (teacher report), infusion of tobacco information in mainstream lessons, and the use of non-traditional modes of instruction were positively associated with student recall of exposure to program services in both middle and high schools.
- Students in TUPE-funded schools were also more likely to receive training in specific content areas, such as why people smoke, youth smoking prevalence, physical harmfulness of smoking, and SHS.
- Coordinator preparedness to teach tobacco use prevention lessons was positively associated with student exposure to program services in grantee vs. non-grantee schools.

- Except for the examples just described, few differences between grantee and non-grantee schools were found showing that TUPE program implementation measures impacted students.

**14. There is little evidence to indicate that school-level tobacco policies and TUPE practices are associated with student tobacco use. There is a similar lack of evidence to indicate that TUPE-funded schools differ from non-grantee schools in these patterns of association.**

- As with student reports of program exposure, student anti-smoking attitudes and beliefs were associated with teacher perceptions of support and clear mandate from the school district that teachers were expected to teach TUPE to students.
- Enforcement of the school's no-tobacco-use-on-campus policies, punitive and supportive consequences for students caught smoking, and inclusion of tobacco lessons in the curriculum were only sporadically related to student tobacco use or tobacco use precursors.
- Students in schools that sponsored school-wide tobacco use prevention activities did not smoke less or exhibit lower smoking risk than students in other schools, nor were they more likely to endorse anti-tobacco beliefs and attitudes.
- The only consistent evidence related to student tobacco use concerned hours of TUPE instruction: the higher the number of hours, the lower the tobacco use and the higher the anti-smoking precursors (such as intent not to smoke).
- Differences in student tobacco use and tobacco use precursors were not associated differentially with program policies and practices in grantee vs. non-grantee schools.

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